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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/478,884	01/01/2000	KAZUYUKI KURODA	35.C14215	2326

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EXAMINER

SIMONE, CATHERINE A

ART UNIT	PAPER NUMBER
1772	10

DATE MAILED: 12/20/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/478,884	KURODA ET AL.	
	Examiner	Art Unit	
	Catherine Simone	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
 THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) 24-47, 53 and 54 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-23 and 48-52 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9 .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Election/Restrictions

1. Claims 24-47 and 53 and 54 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claims 3-5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because of minor informalities. In line 3, "is" should be replaced with "are". In line 6, "can be" should be replaced with "is". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 1-23 and 48-52** are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear how polymer chains of the polymeric compound are oriented towards a second direction parallel to the surface. Also, it is not clear how the first and second direction are different from each other and/or orthogonal to each other. Furthermore, what is the "prescribed direction" the polymeric surface is rubbed and how is the prescribed direction the same direction as the first direction? Moreover, what are the structural limitations when using Langmuir-Blodegett film? How is the material different, structurally? It is only being described as a method to prepare the polymer film. There is no explanation of how the Langmuir-Blodgett film changes the orientation of the material. Clarification is requested.

6. **Claims 1-23 and 48-52** are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The size of the mesopores is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Correction is required.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. **Claims 6 and 13-23** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

By the use of a trademark (Langmuir-Blodgett) in **claims 6 and 19**, the scope of the claims is indefinite. (Ex parte Simpson et al., 218 USPQ 102). Correction is required.

The term "rod-like" in **claim 13** is a relative term which renders the claim indefinite. The term "rod-like" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined

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was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

10. **Claims 1-5, 7, 8, 9, 11-18, 20, 23 and 48-52** are rejected under 35 U.S.C. 102(e) as being anticipated by Ozin et al. (6,027,666).

Ozin et al. discloses a mesostructured material having tubular mesopores (see col. 5, lines 59-64), the mesostructured material being arranged on a polymeric surface constituted of a polymeric compound (see col. 5, lines 28-32), wherein the tubular mesopores are oriented towards a first direction parallel to the surface (see col. 8, lines 6-10). Regarding **claim 2**, the mesostructured material contains silicon (see col. 7, lines 25-27). Regarding **claims 3-5** and **7 and 8**, the subject matter is inherent in the reference to Ozin et al. (see col. 8, lines 10-18). Regarding **claim 9**, the polymeric surface contains polyethylene (see col. 9, lines 22-25). Regarding **claim 11**, the polymeric surface is constituted of a polymeric film arranged on a substrate, and the mesostructured material is formed on a free surface of the polymeric film (see col. 6, lines 12-18). Regarding **claim 12**, the substrate material is made of a glass (see col. 5, lines 51-53).

In reference to **claim 13**, Ozin et al. discloses a mesostructured silica (see col. 12, lines 4-5), in which chains of the polymer material are oriented to a first direction parallel to the polymeric surface (see col. 2, lines 15-18), having tubular mesopores (see col. 5, lines 59-64) wherein the tubular mesopores are oriented to a second direction nearly perpendicular to the first direction (see col. 8, lines 16-18) and the oriented tubular mesopores are formed on the polymeric surface by locating silica outside of an oriented rod-like surfactant micelle structure

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(see col. 6, lines 7-12) of which orientation is determined by parallel accommodation of molecules of the surfactant on the chains of the polymer material through chemical interaction (see col. 8, lines 10-18). Regarding **claims 14-17**, the surfactant is a cationic surfactant or nonionic surfactant (see col. 6, lines 1-7) wherein the cationic surfactant is a quaternary alkylammonium salt (see col. 6, lines 1-3). Regarding **claim 18**, the nonionic surfactant is a surfactant containing polyethylene oxide (see col. 6, lines 6-7). Regarding **claim 20**, the polymer material is polyethylene (see col. 9, line 23-25). Regarding **claim 23**, the polymeric surface is constituted of a film made of a polymer material (see col. 5, lines 27-38), the film being arranged on a substrate, and the substrate is made of silicon oxide (see col. 6, lines 13-21). Regarding **claims 48-52**, the subject matter is inherent in the reference to Ozin et al. Note a variety of other shapes and orientations of the mesoporous material can be made (see col. 8, lines 16-18).

Process limitations are given little or no patentable weight. The method of forming the product is not germane to the issue of patentability of the product itself. Further, when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claim in a product-by-process claim, the burden is on the Applicant to present evidence from which the Examiner could reasonably conclude that the claimed product differs in kind from those of the prior art. *In re Brown*, 459 F.2d 531, 173 USPQ 685 (CCPA 1972); *In re Fessman*, 489 F.2d 742, 180 USPQ 324 (CCPA 1974). This burden is NOT discharged solely because the product was derived from a process not known to the prior art. *In re Fessman*, 489 F.2d 742, 180 USPQ 324 (CCPA 1974).

Furthermore, the determination of patentability for a product-by-process claim is based on the product itself and not on the method of production. If the product in the product-by-

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process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 946, 966 (Fed. Cir. 1985) and MPEP §2113. In this case, the limitations of **claims 6 and 19** where the polymeric surface is constituted of a Langmuir-Blodgett film is a method of production and therefore does not determine the patentability of the product itself.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. **Claims 10 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozin et al. (6,027,666) in view of Leung et al. (6,171,687).

Ozin el al. discloses a mesostructured material having tubular mesopores, the mesostructured material being arranged on a polymeric surface constituted of a polymeric film arranged on a substrate, wherein the tubular mesopores are oriented towards a first direction parallel to the surface. However, Ozin et al. fails to disclose the polymeric surface to contain polyimide. Leung et al. teaches that it is known in the art to have a polymeric surface containing polyimide (see col. 6, lines 1-3) for the purpose of forming a good orientation of the mesoporous material film.

Therefore it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have the polymeric surface of Ozin et al. contain polyimide as suggested by Leung et al. in order to form a good orientation of the mesoporous material film.

13. **Claim 22** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozin et al. (6,027,666) in view of Itoh et al. (4,919,810).

Ozin el al. discloses a mesostructured silica having tubular mesopores, the mesostructured material being arranged on a polymeric surface constituted of a polymeric film arranged on a substrate, wherein the tubular mesopores are oriented towards a first direction parallel to the surface. However, Ozin et al. fails to disclose the mesostructured silica wherein the mesopores are hollow. Itoh et al. teaches that it is known in the art to have hollow mesopores (col. 6, lines 9-12) for the purpose of having another structure of the mesoporous silica material.

Therefore it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have the mesoporous silica material of Ozin et al. contain hollow mesopores as suggested by Itoh et al. in order to have another structure of the mesoporous silica material.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents are cited for further teachings of porous materials similarly to that instantly disclosed.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Catherine Simone whose telephone number is (703) 605-4297. The examiner can normally be reached on 9:00-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on (703) 308-4251. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 872-9310 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Catherine Simone
Examiner
Art Unit 1772

Harold Pyon
HAROLD PYON
SUPERVISORY PATENT EXAMINER 12/15/01
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December 13, 2001